CHAPTER I

INTRODUCTION AND DESIGN OF THE STUDY

INTRODUCTION

Agriculture and allied activities are the main stay of Indian economy and processes and policies having an impact on these activities would be of prime importance since it is likely to result in gains for the economic upliftment of a major lot of the population. The Agriculture sector in India has made significant forward strides since independence. Agriculture is a way of life, a tradition that for centuries has shaped the thought, outlook, culture and the economic life of the people of India. The late sixties of the last century witnessed a Green Revolution and the annual food grain production increased four fold, from about 51 million tonnes in the early fifties to 206 million tonnes by the turn of the 21st century\(^1\). With the globalisation policies of the Government of India, agriculture is undergoing tremendous changes. Commercialisation of agriculture with hi-tech management systems and practices, new varieties of crops, hybrid high value, etc., has opened a new era in Indian agriculture.

Globalisation is the process of international integration arising from the interchange of world views, products, ideas and other aspects of culture. Advances in transportation and telecommunications infrastructure, including the rise of the telegraph and its posterity the Internet, are some of the major factors accentrating globalisation, generating further interdependence of economic and cultural activities.

In the past two decades, globalisation was often primarily focused on the financial side of the world, such as trade, foreign direct investment and international capital flows, where as more recently the term had been expanded to include a broader range of areas and activities such as culture, media, technology, socio-cultural, political, and even biological factors also.

Globalisation is set to have a major impact on world horticultural production and distribution of fruits and vegetables; the world horticulture trade has become fiercely competitive, since last few years. Growing supplies, especially from developing economies, have exerted pressure in all key markets for a range of products. Non-price attributes such as quality, food safety, niche market (such as organic and fair trade), environment, and social responsibilities are increasingly becoming market-positioning strategies, both for global and domestic markets, in such a competitive environment.

**Impact of Globalization on Indian Agriculture**

The liberalisation of India's economy was implemented in India since 1991. Facing a severe economic crisis, India approached the IMF for a loan and the IMF granted loan, which is called a 'structural adjustment' loan with certain conditions attached relating to a structural changes in the economy. The government ushered in a new era of economic reforms based on these conditions. These reforms (broadly called Liberalisation by the Indian media) can broadly classified be into three areas: Liberalisation, Privatization and Globalization. Essentially, the reforms sought to gradually phase out Government control of the market (Liberalisation), privatize public sector organizations (Privatization), and reduce export subsidies
and import barriers to enable free international trade (Globalization). There was a considerable amount of debate in India at the time of the introduction of the reforms, it being a dramatic departure from the protectionist, socialist nature of the Indian economy up until then.

Agriculture Sector in India is one of the most significant one of the Indian Economy. Agriculture and allied activities are the only means of living for almost two-thirds of the employed class in India. As expedated by economic data for financial year 2006-07, agriculture has contributed 18 percent of India's GDP².

The agriculture sector in India was said to occupy almost 43 percent of India’s geographical area. Agriculture is still the only largest contributor to India's GDP, even after a decline in the same in its share. Agriculture also plays a significant role in the growth of socio-economic sector in India.

In the earlier times, India was largely dependent on food imports but the success stories of the agriculture sector of Indian economy have made it self-sufficing in grain production. The country also has substantial reserves for the same. India depends heavily on the agriculture sector, especially on the food production front after the 1960 crisis in food sector. Since then, India had put in a lot of effort to be self-sufficient in the food production and this endeavor of India has led to the Green Revolution. The Green Revolution came into existence with the aim to improve the agriculture in India.

The Green Revolution in the agriculture sector of Indian economy focused mainly on the following:

1. Acquiring more area for cultivation purposes

2. Expanding irrigation facilities

3. Use of improved and advanced high-yielding variety of seeds

4. Implementing better techniques that emerged from agriculture research

5. Water management

6. Plan protection activities through prudent use of fertilizers, pesticides and cropping applications

All these measures taken under the Green Revolution initiatives led to a substantial rise in the wheat and rice production in India's agriculture. Considering the quantum leap witnessed by the wheat and rice production in India's agriculture, a National Pulse Development Programme, that covered almost 13 states, was set up in 1986 with the aim to introduce the improved technologies to the farmers. A Technology Mission was introduced in 1986, right after the success of National Pulse Development Programme to boost the oilseeds sector in Indian economy. Pulses too came under this programme. A new seed policy was planned to provide entry to superior quality seeds and plant material for fruits, vegetables, oilseeds, pulses, and flowers. The Indian government also set up a Ministry of Food Processing Industries to stimulate the agriculture sector of Indian economy and make it more lucrative.
India's agriculture sector highly depends upon the monsoons as heavy rainfall during this time leads to a rich harvest. But the entire year's agriculture cannot possibly depend upon only in one season. Taking into account this fact, a second Green Revolution was envisaged to overcome such restrictions. An increase in the growth rate and irrigation area, improved water management, improving the soil quality and diversifying into high value outputs, fruits, vegetables, herbs, flowers, medicinal plants, and bio-diesel were also on the list of the services to be taken by the Green Revolution to improve the agriculture in India.

Unique farming systems were strategically utilized in India, according to the locations where they were most suitable. The farming systems that significantly contribute to the domestic GDP of India were subsistence farming, organic farming, and industrial farming. Regions throughout India differ in the type of farming they use; some are based on horticulture, lay farming, agro forestry, and many more. Due to India’s geographical location and spread, certain parts experience different climates, thus affecting each region's agricultural productivity differently. India is very dependent on its monsoon-based periodic rainfall. Only some parts of India would receive rainfall throughout the year. Dependency on these monsoons is risky because there are great variations in the average amount of rainfall received by the various regions—from too much for most crops in the eastern Himalayas to never enough in Rajasthan. Season-to-season variations of rainfall are also significant and the consequences of these are bumper harvests and

---

crop searing. For this reason, development of irrigation in India has always been one of the main priorities in Indian planning. If it weren’t for large scale government involvement in storage of water for agricultural irrigation.

Indian agriculture has an extensive background which goes back to at least ten thousand years. Currently the country holds the second position in agricultural production in the world. In 2007, agriculture and other industries such as lumbering and forestry made up to more than 16 per cent of India's GDP. Despite the steady decline in agriculture's contribution to the country’s GDP, Indian agriculture is the biggest industry in the country and plays a key role in the socioeconomic growth of the country. India is the second biggest producer of wheat, rice, cotton, sugarcane, silk, groundnuts, and dozens more. It is also the second biggest harvester of vegetables and fruit, representing 8.6 per cent and 10.9 per cent of overall production, respectively. The major fruits produced by India are mangoes, papayas, sapota and bananas. India also has the biggest number of livestock in the world, holding 281 million. In 2008, the country housed the second largest number of cattle in the world with 175 million.

Fruits and Vegetables

World production of fruits and vegetables stood at over 646 million metric tonne and 1159 million metric tonne respectively during the year 2012-2013. China is the leading producer of fruits and vegetables. China produced 137 million metric tonne of fruits from an area under cultivation of 11 million hectare with a productivity of 11.6 (metric tonne / hectare). India is the second largest producer of

---

4 Guiteras Raymond, 2007. "The Impact of Climate Change on Indian Agriculture"
6 Ibid.
fruits with 81 million metric tonne from the fruit cultivated area of 6 million hectare and recorded productivity of 11.6. Brazil was the third largest fruit producing country with 38 million metric tonne. Their productivity was comparatively higher than India and China with 16.5 (Mt/Ha). Among the fruit producing countries USA recoded a very high productivity of 23.3 (Mt/Ha) and they were placed fourth in world’s fruit production⁷.

In vegetable production, China played a predominant role. China is the leading producer of vegetables in the world. They produced 573 million metric tonne of vegetables during the year 2012-2013. The area under cultivation of vegetable was 24 million hectare and productivity was 23.4 (Mt/Ha). India was the second largest producer of vegetables with 162 million metric tonne from the cultivation area of 9 million hectare. India’s recorded productivity was 17.6 (Mt/Ha). USA was in third place with 35 million metric tonne. Their utilized area for cultivation of vegetable was 1.1 million hectare and productivity was 32.5 (Mt/Ha). In vegetable production Spain recorded the highest productivity of 39.3 (Mt/Ha) and it was in the ninth place in quantity produced.

As far as productivity of both fruits and vegetables is concerned, India’s productivity is comparatively too low than other countries. Even though India is the second largest producer of fruit and vegetables in the world, its productivity is very low at 11.6 (Mt/Ha) for fruits and 17.6 (Mt/Ha) for vegetables. Productivity in USA is more than double that of India’s. Similarly in vegetable production Spain recorded a high productivity of 39.3. India’s productivity of only 17.6 (Ha/Mt). Points to a need for good cultivation methods, modern harvesting and post harvesting techniques to increase the productivity of the country.

The vast production base offers India tremendous opportunities for production and export. During 2012-13, India exported fruits and vegetables worth Rs.5986.72 crore which comprised fruits worth Rs. 2503.75 crore and vegetables worth Rs. 3482.97 crore.

Mangoes, walnuts, grapes, bananas, pomegranates account for a large portion of fruits exported from the country while onions, okra, bitter gourd, green chillies, mushrooms and potatoes contribute largely to the vegetable export basket.

The major destinations for Indian fruits and vegetables are UAE, Bangladesh, Malaysia, UK, Netherland, Pakistan, Saudi Arabia, Sri Lanka and Nepal.

Though India's share in the global market is still only around 1 percent, there is an increasing acceptance of horticulture produce from the country. This occurred due to concurrent developments in the areas of state-of-the-art cold chain infrastructure and quality assurance measures. Apart from large investment pumped in by the private sector, public sector has also taken initiatives and with APEDA's assistance, several centers for perishable cargoes and Integrated Post Harvest Handling facilities have been set up in the country. Capacity building initiatives at the farmers’, processors’ and exporters' levels were also included in this effort.

Over 90 percent of India’s exports in fresh fruits and vegetables mainly go to West Asian and East European markets. With respect to export value, mango is the main fruit crop and among vegetables, onion occupies the first position. In the recent years, potatoes and green vegetables like okra, bitter gourd and green chillies are also showing good export potential. Commodity-wise analysis reveals,
majority of India’s fruits and vegetables are exported to neighbouring countries followed by Middle East region. Bangladesh is one of the major trading partners for India for exports of fresh fruits, and onions and potatoes. However, in the recent years, fruits from India such as grapes, mangoes, and vegetables, such as eggplant are increasingly gaining market share in the UK, the Netherlands, France and Germany.

India is the fruit and vegetable basket of the world. India produces 44% of world’s mango, 42.6 per cent of papaya, and 25.6 per cent of banana and also produces other fruit like apple, orange and grapes in significant volume. In vegetable production India’s role in world production is at a significant level with a share of 27.1 per cent of brinjal, 35.6 per cent of cauliflower, 72.2 per cent of okra, 20.2 per cent of onion, 12.4 per cent of potato and 11.2 per cent of tomato produced. India is the largest producer of mango, banana, papaya and second largest producer of brinjal, onion, tomato, cauliflower and cabbage in the world⁹.

In the year 2012-2013 India produced 2,65,09,000 metric tonne of banana with a productivity of 34.2 (Mt/Ha) from the cultivation area of 7,76,000 hectare. Mango is widely cultivated fruit crop in India. Majority of the fruit cultivated area was used for cultivation of mango fruit. From the total fruit cultivated area of 69,82,000 hectare mango cultivated area was 22,97,000 hectare during the year 2012-2013. It accounts for 35.8 per cent of the total fruit cultivated area. But due to poor yield and productivity of 7.2 (Mt/Ha), production wise mango occupies second place next to banana.

⁹ Ibid.
Of the share of fruit production in India, banana accounts for 32.6 per cent, mango 22.15 per cent, citrus fruits 12.4 per cent and papaya 6.6 per cent. These four fruits account for 73.79 per cent of the total fruit production in India\textsuperscript{10}. Although one-fourth of the total fruit production in India constitute mango, its share in the world mango exports is negligible, largely due to poor harvesting technique and lack of proper post harvest management.

However for mango, besides as a fresh fruit, export potential exists as exports in processed forms. Some of the processed food products that are increasingly gaining importance in the domestic as well as international markets are mango pulp, mango squash and mango jam. Mango pulp produced in India had been largely exported to Arabic countries.

In vegetable production potato played an important role with the share production of 27.95 per cent followed by tomato 11.2 per cent and onion 10.36 per cent. These three vegetable production accounts for around 50 per cent of the total vegetable production in India\textsuperscript{11}.

Table 1.1 and Figure 1.1 show the total area and production of fruits and vegetables from 2003-2004 to 2012-2013. It clearly indicates that the area under cultivation of fruits and vegetables and its production had gradually increased over this period of time.

\textsuperscript{10} Ibid.
\textsuperscript{11} Ibid.
Table 1.1
Production of Fruits and Vegetables in India

(in ‘000)

| Year   | Fruits | | Vegetables | |
|--------|--------|------------------|------------------|
|        | Area (Ha) | Production (Mt) | Area (Ha) | Production (Mt) |
| 2003-04 | 4661 | 45942 | 6082 | 88334 |
| 2004-05 | 5049 | 50867 | 6744 | 101246 |
| 2005-06 | 5324 | 55356 | 7213 | 111399 |
| 2006-07 | 5554 | 59563 | 7581 | 114993 |
| 2007-08 | 5857 | 65587 | 7848 | 128449 |
| 2008-09 | 6101 | 68466 | 7981 | 129077 |
| 2009-10 | 6329 | 71516 | 7985 | 133738 |
| 2010-11 | 6383 | 74878 | 8495 | 146554 |
| 2011-12 | 6705 | 76484 | 8989 | 156325 |
| 2012-13 | 6982 | 81285 | 9205 | 162187 |

Source: NHB Database – 2013

Figure 1.1
Production of Fruits and Vegetables in India
ERROR: typecheck
OFFENDING COMMAND: image

STACK:
  -dictionary-
  -mark-
  -savelevel-